ALCOHOL EXPECTANCIES AND TREATMENT: A REVIEW OF LITERATURE

by

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ABSTRACT

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This paper reviews the main issues in alcohol expectancy research, and identifies how these findings can best be used in substance abuse treatment. The paper includes a review of literature on theoretical perspectives of alcohol expectancies, different types of related testing instruments, and early research in alcohol expectancies. It also includes research related to the role of alcohol expectancies in predicting behaviors, preventing alcohol abuse or dependency, and the treatment of alcohol dependence. This review also includes implications for the use of alcohol expectancies in treating and preventing alcohol dependence, as well as recommendations for future research.

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Chapter I

Introduction

According to the National Council on Alcoholism and Drug Dependence (NCADD), as cited on their website (http://www.ncadd.org/problems.html. Retrieved September 19, 2000), alcohol contributes to 100,000 deaths annually, making it the third leading cause of preventable mortality in the United States. The NCADD also states in this same website that "on average, untreated alcoholics incur health care costs at least 100% higher than those of non alcoholics, and this disparity may exist as long as 10 years before entry into treatment". The NCADD goes on to state "School-based prevention programs that focus on social influences, such as peer resistance training or attempts to change perceived norms about alcohol, show more promise for changing alcohol use patterns than programs that emphasize the development of personal capabilities such as self-esteem, skill in making decisions and solving problems, and understanding how alcohol use can interfere with personal values and goals" (http://www.ncadd.org/problems.html. Retrieved September 19, 2000).

When examining perceived norms about alcohol within the context of preventing and treating alcoholism, the role of alcohol expectancies becomes crucial. An expectancy is typically defined as an intervening cognitive variable that is explicit or implicit. It is knowledge about the relationship between events or objects (Goldman, Brown, & Christiansen, 1987). The knowledge can be in the form of information, encodings, schema, or scripts, depending on the field of study.

Expectancies are known by other terms. For instance, in social psychology, expectancies are also called attitudes, beliefs, and attributions. Cognitive psychologists look at expectancies much like map reading, or "coding, storing, and retrieving information, or making a decision"

(Goldman, Brown, & Christiansen, 1987, p. 183). From this point of view, expectancies can be very important for explaining the relationship between stimuli and responses, or outcomes.

The concept of expectancies can be traced back to behaviorists such as Tolman, who proposed that subjects learned a relationship between a stimulus, the response, and the outcome. This relationship is now called an expectancy (Goldman, Brown, & Christiansen, 1987). Bolles thought that expectancies were so critical to the learning process, that he wanted to replace the concept of association with expectancies. He believed that rather than learning an association between a stimulus and a response, the subject learns two different expectancies. These are the relationships between environmental stimuli and the resulting outcomes, and contingencies between the subject's responses and the environmental outcomes (Goldman, Brown, & Christiansen, 1987).

There are a variety of measurement problems related to expectancies. The cognitive nature of expectancies make them difficult to measure. It is also difficult to determine if the expectancies can be tied to observable outcomes. It is also unclear whether the relationship between expectancies and outcomes is causal or correlational in nature (Goldman, Brown, & Christiansen, 1987).

Regardless the exact nature of the relationship between expectancies and outcomes, they are important enough to be accounted for in studies using placebos (Marlatt & Rohsenow, 1980; Ross, Krugman, Lyerly, & Clyde, 1962; Shapiro & Morris, 1978). These studies have shown that expectancies are important in the correlation between a stimulus and a response.

An area where the use of placebos seem to be particularly important, in relation to expectancies, is in alcohol use and abuse. From an expectancy perspective, the reason people begin drinking, maintain drinking, sometimes abuse alcohol, and even become alcohol dependent is because they expect to get a desired outcome from alcohol consumption (Goldman, Brown, & Christiansen, 1987). This is a simplified description of a process that is significantly more complicated. For example, other factors such as the pharmacological effects of alcohol, individual characteristics of each subject, and the environment where the drinking takes place, also affect drinking behavior.

Many studies have examined the realm of alcohol expectancies. Some of the issues researched in relation to alcohol expectancies are gender differences (Abrams & Wilson, 1979; Wilson & Abrams, 1977), the pharmacological effects of alcohol (Christiansen, Goldman, & Inn, 1982; Marlatt, 1984; Wilson, 1983), emotions (Cappell, 1975; Cappell & Herman, 1972; Marlatt, 1984), cognitive and motor functioning (Miller, Adesso, Fleming, Gino, & Lauerman, 1978; Rimm, Sininger, Faherty, Whitey, Whitey, & Perl, 1982; Vuchinich and Sobell, 1978), sex and aggression (Briddell & Wilson, 1976; Carpenter & Armenti 1972), and cultural differences (MacAndrews & Edgerton, 1969). A major area of study is adolescent drinking (Barnes, 1981; Biddle, Bank, & Marlin, 1980). Many of these studies are predictive in nature.

There have also been studies identifying specific alcohol expectancies (Brown, Goldman, Inn, & Anderson, 1980; Faber, Khavari, & Douglass, 1980; Southwick, Steele, Marlatt, Lindell, 1981). The Alcohol Expectancy Questionnaire (AEQ), which is the most comprehensive, and frequently cited instrument used in this field, lists many expectancies (Brown, Goldman, Inn, & Anderson, 1980). Specific alcohol expectancies will be reviewed further within this paper.

STATEMENT OF THE PROBLEM

There are volumes written on the treatment of alcoholism. There is also substantial information written regarding the role of alcohol expectancies in relation to alcoholism. Alcohol expectancies may play a part in explaining what motivates a person to continue drinking despite negative consequences. The main challenge in the field of alcohol expectancies is determining what information is important in explaining alcohol use and abuse. This information can then be applied to the treatment of alcohol dependence.

PURPOSE AND SCOPE

This paper reviews the main issues in alcohol expectancy research and identifies how expectancies can best be used in substance abuse treatment. This paper will first review literature on theoretical perspectives of alcohol expectancies and types of alcohol expectancy instruments. This will include a review of the early research in alcohol expectancies which created the foundation for current research. The last group of literature to be reviewed is research involving alcohol expectancies in predicting

behavior, preventing alcohol abuse or dependency, and the treatment of alcohol dependent individuals using information about alcohol expectancies. The paper will conclude with implications for the use of alcohol expectancies in treating and preventing alcohol dependence, followed by recommendations for future research.

DEFINITION OF TERMS

Alcoholic, alcoholism, and chemical dependence are terms frequently used to describe alcohol dependence. The terms refer to a person who meets the DSM-IV criteria for alcohol dependence, including using alcohol to produce a mood change that subsequently requires alcohol more often and in larger amounts to achieve the same effect. Eventually the person is unable to control alcohol consumption, with dependency on alcohol the result. This use continues, without regard to the consequences for themselves, their families, their finances, or their employment (American Psychiatric Association, 1994; Baron-Faust, 1997; Davis & DiNitto, 1998). The term relapse refers to returning to a pattern of past undesired drinking behavior that meets the DSM-IV criteria for alcohol dependence.

An expectancy is an intervening cognitive variable that is explicit or implicit. It is knowledge about the relationship between events or objects (Goldman, Brown, & Christiansen, 1987). Within the context of this paper, expectancies refer to alcohol expectancies, or alcohol outcome expectancies, which are beliefs about the outcomes of using alcohol. These expectancies can be positive or negative, and may include beliefs about the social impacts and effects of drinking on mood and behavior (Christiansen & Goldman, 1983; Miller, Smith, & Goldman, 1990; Smith & Goldman, 1995). Priming

refers to when “a response to a stimulus is affected by the presentation of a prior stimulus” (Roehrich & Goldman, 1995, p. 402).

The terms self-efficacy and self-confidence are used interchangeably. These terms refer to a person’s belief that there is an effective and realistic solution to a problem, and that the person is able to implement the changes necessary (Hester & Miller, 1989).

The following acronyms will be used within this paper:

1. AODA (alcohol and other drug abuse), which is synonymous with substance abuse;
2. AEQ (Alcohol Expectancy Questionnaire), which is an instrument used to evaluate alcohol expectancies;
3. AEQ-A (Alcohol Expectancy Questionnaire-Adolescent Version), an instrument similar to the adult version, used to evaluate the alcohol expectancies of an adolescent;
4. EDAQ (Effects of Drinking Alcohol Questionnaire), an instrument used to evaluate the effects of drinking alcohol;
5. DEQ (Drinking Expectancy Questionnaire), an instrument used to evaluate alcohol expectancies;
6. NAEQ (Negative Alcohol Expectancy Questionnaire), an instrument used to evaluate negative alcohol expectancies.

Chapter II

Theoretical Perspectives and Development of Instruments

Early Research of Alcohol Expectancies

In examining the research on alcohol expectancies, it became very apparent that in order to report on the issue in a comprehensive manner, a brief review of the founding research was necessary. The following review offers an overview of early research as it relates to the development of current research and theory of alcohol expectancies. In addition, the instruments used in current research are described.

MacAndrew and Edgerton (1969) concluded that pharmacological action alone does not sufficiently explain the effects of alcohol. This study provided extensive anthropological evidence that the effects of alcohol vary from culture to culture, within a given culture among individuals, and within an individual across occasions.

Early placebo studies have supported the hypothesis that a person's beliefs about the effects of alcohol, beyond the pharmacological effects of alcohol alone, contribute to changes in social behavior after drinking. Marlatt, Demming, and Reid (1973) completed an important early study in which they used a balanced placebo design. They tested the hypothesis that expectancy, rather than beverage content is responsible for increased alcohol consumption and drinking out of control, after having a beginning priming drink. They found that both alcohol dependent individuals and social drinkers who believed that their beverages contained alcohol drank more than those who thought their beverages contained no alcohol. The actual content of the beverages had no effect on the amount of drinks consumed, and loss of control drinking did not occur in any of the experimental

conditions. This study refuted traditional beliefs that alcohol dependent individuals continue to drink after an initial drink due to a biochemical process.

Marlatt and Rohsenow (1980) continued to use the balanced placebo design to further examine the effects of expectancies on a variety of behavioral domains. They found that the behaviors affected most by expecting alcohol were consumption of and craving for alcohol, and social behaviors such as sexual arousal and aggression.

The development of expectancies seems to be the result of a combination of processes. Goldman, Brown, and Christiansen (1987) suggest that alcohol expectancies are learned in large part by directly viewing others, invivo, and in the media. They have found that behavior that follows drinking, whether a direct result from alcohol or not, is likely to be attributed to alcohol and therefore expected to occur in future drinking. Such expectancies are especially likely when consistent with cultural norms and stereotypes regarding alcohol.

Maisto, Connors, and Sachs (1981) developed a reference level model of alcohol intoxification that incorporates expectancies as an important mediator of alcohol effects. A basic hypothesis of the reference level model is that an individual has beliefs or expectations about the effects of alcohol based on past direct and indirect learning experiences with alcohol. Desired psychological and behavioral changes are primarily influenced by the predrinking psychological and physical state. It is suggested that these factors combine to determine the likelihood that the initiation of drinking will occur. An individual's choice of setting in which to drink can affect how much alcohol is consumed. The setting, and the amount of alcohol consumed, affect changes in physiology that, in turn affect the perception of being intoxicated. The perception of being intoxicated

affects the occurrence of psychological and behavioral changes, which in turn influence the perception of the level of intoxification. Maisto, Connors, and Sachs (1981) also theorized that setting characteristics may alter what changes the drinker desires. The relationship between psychological and behavioral changes, and desired change, indicates that the changes that occur are compared to changes desired at the particular time. These comparisons affect decisions related to additional drinking.

Stacy, Widaman, and Marlatt, (1990) completed three studies regarding expectancy models. The first study was designed to discern whether expectancy models are biased by self-report. If this were the case, then self-reported drinking would be a stronger correlate of self-reported alcohol expectancies than the drinking itself, as measured by a collateral of the subject. The subjects were required to bring a friend, who served as the collateral. Both completed reports concerning the subject and the friend, thus yielding a self-report, and a peer-report. The three reports used were an alcohol use rating, an alcohol quantity/frequency (QF) rating, and negative consequences (NC) from alcohol use. The results showed no significant differences between the self-reports and peer-reports of alcohol consumption, and positive expectancies. The results also showed that there were significant associations between positive expectancies and self-reported alcohol use. These findings suggest that there is no self-report bias evident in the self-report method, indicating that the associations between self-reported drinking and expectancies were reliable.

The second study was designed to investigate prospectively the differences between positive and negative alcohol expectancies. Another goal was to investigate whether a model of alcohol expectancies would hold up, regardless of which measures were used.

The subjects were assessed three times in 6 months, with the authors reporting on the first two assessments for the purpose of this study: The first assessment (T1) and the second assessment (T2) taken two weeks after T1. They also recorded their drinking behaviors daily. At T1, the subjects were asked to record separately what good and bad outcomes they expected from their alcohol use in the next two weeks. They were asked to write the three most important good and bad outcomes on two more separate pages. On the same page, they filled out a 5-point scale for belief strength, and evaluation of each outcome they listed. The recording methods were designed to yield results from questionnaires and self-monitoring.

The four most frequent positive outcomes were social rewards, relaxation (tension reduction), having a good time, and enhanced sexual outcomes. The four most frequent negative outcomes were hangover, sickness, financial cost, and problems in school.

When the models were compared, it was found that positive expectancies were predictive of alcohol use in both the use of a questionnaire, and self-monitoring measures. Negative expectancies were not predictive of alcohol use.

Study 3 sought to replicate the findings of Study 2 by using the basic expectancy model. It also assessed the discriminate validity of positive expectancies, negative expectancies, and attitudes, which are similar conceptually. Finally, it presented the major theoretical comparisons of the basic expectancy model and attitudinal theories. Each subject was assessed two times with a four-week interval between the times. They assessed attitudes and behaviors. Measurements of past alcohol use in the previous month, and intended use during the coming month were taken at T1. Future alcohol use was measured by the amounts used between T1 and T2. Frequencies and heaviness of

drinking were also measured, along with attitudes regarding the amounts used. The results replicated the findings from Study 2.

The overall results of these three studies indicate that positive expectancy and attitude independently predict intention to use alcohol. The results also indicated that positive expectancy seems to be a better predictor of intention to use alcohol, than attitude. Intention, in turn, was important in predicting future alcohol use. This shows that the effect of positive expectancy on drinking was mediated by intention. The studies also showed that positive expectancies were found to be a substantially better predictor of alcohol use than negative expectancies. These studies considered together support the use of expectancy theory in studying the causes of alcohol consumption, and alcohol dependence.

The Alcohol Expectancy Questionnaire

The development of the Alcohol Expectancy Questionnaire (AEQ) (Brown, Goldman, Inn, & Anderson, 1980; Brown, Christiansen, & Goldman, 1987) was instrumental in bridging the gap between theory, the application of alcohol expectancies in predicting future usage, and treatment of drinking problems. This questionnaire is available in two forms, the Adult and Adolescent AEQ. The Adult form consists of 90 items that measure six different domains of expectancies. The domains consist of global positive changes, sexual enhancement, physical and social pleasure, increased social assertiveness, relaxation and tension reduction, and arousal and aggression. Scores are calculated by totaling individual items for each scale. The items in each scale are mutually exclusive. Each item was chosen on the basis of content and psychometric properties, after extensive factor analysis.

The Adolescent form consists of 90 items as well, which were chosen for content and psychometric properties, after interviewing adolescents ranging in ages from 12 to 19 years. The Adolescent form consists of seven expectancies including global positive changes, changes in social behavior, improved cognitive and motor abilities, sexual enhancement, cognitive and motor impairment, increased arousal, and relaxation and tension reduction.

The items in the Adolescent version of the AEQ were designed to assess the beliefs of subjects who have not used alcohol yet, applied to the general population, whereas the Adult version contains items which are self-focused. Another difference between the two versions is

that the Adolescent version contains items regarding the negative effects of alcohol, and the Adult version focuses mainly on positive anticipated effects.

The AEQ was developed empirically from a wide range of questions, and a wide range of adults and adolescents, thus representing a large population diverse in age and drinking patterns. The AEQ focuses on personality and behavioral changes associated with the initial stages of drinking. An individual's decision to maintain drinking is often determined during the initial stages of drinking (Brown & Munson, 1987). The Adult and Adolescent AEQ have been shown to have internal consistency and reliability over an eight-week interval. Both instruments have construct and concurrent predictive validity in regard to drinking patterns (Brown, 1985; Brown, Goldman, & Christiansen, 1985). Both instruments have the capability of differentiating problematic from nonproblematic drinkers in adult and adolescent populations. It was found that alcohol dependent

individuals overall maintained a larger number of expectancies regarding the effects of alcohol than did nonproblematic drinkers. (Brown, 1985, Brown, Goldman, & Christiansen, 1985). Brown et al. also found that typical levels of alcohol consumption were positively related to the endorsement of AEQ items.

The development of the AEQ has provided an avenue in which to better assess alcohol expectancies. The AEQ is the most frequently cited instrument in the study of alcohol expectancies. The following is a representation of the early research as it applies to further development of the AEQ, and its uses in researching expectancies.

Connors, O'Farrell, Cutter, and Thompson (1986) found that alcohol dependent individuals almost uniformly scored higher in their endorsements of the affects of alcohol on the AEQ, than either problem or nonproblem drinkers. In this study, the alcoholic and problem drinkers' reports were comparable only on the alcohol 'increases arousal and aggression' scale. The alcohol dependent individuals scored significantly higher than the nonproblem drinkers did on using alcohol as a positive transforming agent, for enhancing assertiveness, and to increase power and aggression. Zarantonello (1986) found similar results. In this study, he found a greater frequency of item endorsement on the positive transforming, social assertiveness, physical and social pleasures, and tension reduction scales among alcohol dependent individuals than among the general medical patient control group.

Rosenow (1983, p. 753) developed a total of nine items to account for the two domains of "negative anticipated consequences" (such as cognitive and/or motor impairment), and "careless unconcern", regarding their behavior, which were not accounted for in the AEQ. These factors were also found to affect drinking decisions.

The use of these items can be used as a supplement to the AEQ. Rosenow also examined the phrasing of the AEQ itself. Some of the questions were written in the first person, and others were phrased for people in general. Rosenow tested the theory that people may answer the questions based on their personal beliefs, or their beliefs of the general population. The results showed that the subjects expected alcohol to affect others in different ways than themselves on each scale of the AEQ, as well as on impairment, and careless unconcern items.

Southwick, Steele, Marlatt, and Lindell (1981) sought to account for variations in expectancies as a function of varying amounts of alcohol, which is not measured in the AEQ. The subjects were asked to rate how a moderate amount or too much alcohol would affect them along a variety of bipolar dimensions i.e. clumsy/coordinated, talkative/reticent, happy/sad, rude/polite. When the ratings were examined through factor analyses, the findings showed three similar clusterings for each amount of alcohol studied. The factors, and the scales representing them, were labeled stimulant/perceived dominance (excited/calm, active/passive, daring/cautious), pleasurable disinhibition impairment (outgoing/reserved, relaxed/tense, more sexual/less sexual), and behavioral impairment (poor concentration/good concentration, careless/careful, inefficient/efficient). Southwick et al. (1981) also noted within group differences. Stimulant/perceived dominance effects were more pronounced for a moderate amount as compared to too much alcohol. Pleasurable disinhibition effects also were more pronounced for the moderate amount of alcohol. Behavioral impairment was anticipated for both quantities of alcohol, particularly for the higher amount. This was one of the

first studies with results suggesting that alcohol expectancies are important in understanding drinking patterns and behavior in drinking situations.

George and Dermen (1988) used portions of the scale used by Southwick et al. (1981) to assess whether ratings for social (more sexual/less sexual, aggressive/unaggressive, talkative/reticent), and nonsocial (quick responses/slow responses, coordinated/clumsy, good concentration/poor concentration) varied with the amount of alcohol. They found that their subjects expected that a moderate dose of alcohol would cause greater effects on social than nonsocial behavior, and the higher dose to have greater effects on nonsocial behavior.

Cooper, Russell, & George (1988) conducted a study based on Social Learning Theory. The purpose of this study was to test a causal model relating expectancies, general coping skills, and the use and abuse of alcohol to the general population. The subjects were diagnosed for alcohol abuse or dependence, according to DSM III, and drinkers without abuse or dependence diagnoses, who were chosen at random. They were also identified according to race, age, and education. The subjects were interviewed using several instruments to measure the subjects' problem drinking status, alcohol consumption, drinking to cope, positive alcohol expectancies, and general coping skills. The specific instrument used to measure problem drinking status was the National Institute of Mental Health Diagnostic Interview Schedule (DIS; Robins, Helzer, Croughan, Williams, & Spitzer, 1981). The questions used were designed to establish a diagnosis of alcohol abuse or dependence.

Cooper, Russell, and George (1988) measured alcohol consumption by using modified questions from the National Health and Leisure Time Survey (Wilsnack,

Klassen, & Wilsnack, 1984). Drinking to cope was measured according to a six-item scale designed by Polich and Orvis (1979). Positive alcohol expectancies were measured by a composite score on six subscales of Rosenow's (1983) shortened version of the Alcohol Expectancy Questionnaire. The expectancies represented in the subscales were global positive effects, social and physical pleasure, sexual enhancement, aggression and power, social expressiveness, and relaxation and tension reduction.

Cooper, Russell, and George (1988) assessed general coping skills according to two trait-type measures, and a process measure. The first trait measure is anger coping styles. This measures how a subject typically reacts to feeling angry or upset. Spielberger it al. (1985) developed items to measure anger-in (suppression of anger), and anger-out (acting out aggressively). Harburg and Gleibermann (1986) designed four items to measure anger-reflect (controlling and dealing with the reason for the anger).

Cooper, Russell, and George (1988) used the "John Henryism" (JH) scale as developed by James, Hartnett, & Kalsbeek, 1983, to measure an active coping style. The principles of this coping style include a belief that they are in control of their environment, and they take direct actions to control a stressful situation. Coping responses were measured by the Health and Daily Living (HDL) Coping Index (Moos, Cronkite, Billings, & Finney, 1986).

Cooper, Russell, and George's (1988) results for predicting problem drinking status show that quantity of alcohol consumed, drinking to cope, and positive expectancies made significant and independent contributions. Drinking to cope and expectancies accounted for about 14% of the variance. Drinking to cope and alcohol expectancies

were weaker as a predictor of problem drinking status. These results were as predicted, and suggest that subjects who express anger in an outward fashion are most likely to abuse alcohol. They also suggest that at levels of consumption, subjects using alcohol to cope, who also have high positive expectancies, are more likely to abuse alcohol.

The collective results of these studies suggest that the AEQ has well-demonstrated concurrent and predictive validity. It has demonstrated be usefulness in a clinical or research setting to the predict the initiation and maintenance of alcohol use. Specific expectancies can be identified, which can in turn be challenged within the therapeutic process. It may also be useful in the prediction of relapse, and identifying those at risk for addiction.

The Effects of Drinking Alcohol Questionnaire

Leigh (1987) sought to further examine the role of expectancies in the outcomes of drinking. The subjects in this study completed the Effects of Drinking Alcohol (EDA) questionnaire which evaluates the beliefs about effects of alcohol on self and others, and includes questions regarding drinking habits (including quantity, frequency, and variability). Leigh's scale consists of twenty items that measure negative and positive social behavior. The subject rated the behavior on a five point scale from likely to unlikely relative to their expectancy for alcohol effect. The results revealed that the subjects reported the belief that others are more likely than themselves to experience the effects of alcohol, especially in regard to socially unacceptable behaviors. Female subjects reported an expectation of greater behavioral impairment for themselves and others. Male subjects reported an expectation of more aggressive behavior for themselves and others. Nondrinking subjects reported an increased likelihood that both positive and

negative effects would occur for themselves and others. Heavier drinkers reported an expectation of more pleasurable effects for themselves and others.

The Drinking Expectancy Questionnaire

The Drinking Expectancy Questionnaire (DEQ) is a 6-factor, 43-item measure of alcohol expectancies that has been revised for use in both community and clinical populations (Young, & Knight, 1989). Five of the factors relate to the specific alcohol expectancies of assertion, affective change, sexual enhancement, cognitive change, and tension reduction. The sixth factor, dependence, is more general, and relates to the perceived level of alcohol involvement. According to Young and Knight (1989), the DEQ can be used on adults, and is especially useful for social drinkers, problem drinkers, and hospitalized drinkers. According to Young, Knight, and Oei (1990), this instrument appears to measure more trait-like than state-like beliefs about alcohol.

Young, Knight, Oei, and Tian (1991) confirmed this in a study. The subjects were sixty university students who were previously identified to have strong expectancies for tension reduction, as determined by the DEQ. The subjects were observed for expectancies in a mildly stressful situation. The subjects were given alcohol or a placebo. The findings revealed that the alcohol expectancies remained stable, even while the subjects were drinking. There were significant decreases in behavioral indicators of tension, and self-reported tension in subjects who were given alcohol. There were no behavioral or self-reported changes in tension in the subjects given the placebo. The stability of the subject's responses in this study seem to indicate once more that the DEQ is measuring more trait-like, than state-like beliefs about alcohol.

The DEQ has been shown to have internal consistency and reliability, as well as content, construct, and predictive validity. (Young & Knight, 1989; Young, Knight, & Oei, 1990). The DEQ can be used to discriminate between problem drinkers, and can be used to assess progress

in therapy. The DEQ can also be used to aid in planning treatment, as well as for further research into alcohol expectancies as they relate to alcohol use.

The Negative Alcohol Expectancy Questionnaire

The Negative Alcohol Expectancy Questionnaire (NAEQ) is used to assess the extent to which negative consequences are anticipated to occur if an individual decided to "go for a drink now" (McMahon & Jones, 1993, 1993a, 1993b). The anticipated negative consequences are believed to influence motivation to stop/restrain drinking. According to McMahon and Jones (1993, 1993a, 1993b), negative expectancies are measured over three consecutive temporary contexts: same-day expected consequences that accompany "going for a drink now"; next-day expected consequences of "going for a drink now"; long-term consequences should drinking continue at the current level. The items are categorized into three subscales: Same-day (21 items), Next-day (18) items, and Long-term (21 items). Proximal (Same-day) and Distal (Next-day and Long-term) subscales are used for analysis. Each item consists of a statement about a negative consequence of drinking alcohol that could possibly occur. The responses are measured on a five-point Likert Scale in terms of how likely a person would anticipate them to occur (1 = highly unlikely and 5 = highly likely). There are versions that can be self-administered, or administered by a therapist or expert experimenter. There is also a short version available.

This instrument can be used on adults of either gender, and of any drinking status. The NAEQ has been shown to have internal consistency and reliability, as well as construct and predictive validity (McMahon & Jones, 1993). It provides both quantitative (current level of motivation to restrain/stop drinking), and qualitative measures (components of the current level of motivation to be addressed). Both measures can be useful in addressing progress in treatment, particularly when used at admission and discharge to assess progress (Jones & McMahon, 1994, 1996).

Comparisons of the Instruments

The AEQ, as stated earlier, differs from other expectancy instruments as it was developed empirically from a wide range of adults and adolescents, thus representing a large population in relation to age and drinking patterns. The AEQ was the first instrument developed to measure alcohol expectancies. Much of the early and recent literature cite the AEQ as the instrument used. The other instruments were developed as a result of studies involving use of the AEQ in order to better explain the role of specific alcohol expectancies as they relate to alcohol use (Brown, Goldman, Inn, & Anderson, 1980; Brown, Christiansen, & Goldman, 1987; Leigh, 1987; McMahon & Jones, 1993, 1993a, 1993b; Young & Knight, 1989; Young, Knight, & Oei, 1990).

Leigh (1989a, 1989b) evaluated three instruments designed to measure alcohol expectancies to determine their effectiveness in predicting drinking habits, and to examine the differences in prediction using different attitude measures. Leigh compared the AEQ, EDA, and AES (Alcohol Effects Scale) (Southwick, et. al. 1981). The AEQ, and the EDA have been described earlier. The AES consists of 37 bi-polar items that

describe both the positive and negative effects expected after a moderate amount of alcohol has been consumed, and after having consumed too much alcohol.

The subjects were college students ranging in age from 17 to 48. Their drinking habits ranged from abstaining from alcohol, to drinking to intoxification every time. The subjects were given the three questionnaires, and their drinking habits were recorded.

The results of the confirmatory factor analysis of the scales showed that the AEQ and the EDA were nearly equal in predicting drinking behavior. The AES explained little of the difference in drinking behavior. It was found that when combined with attitudes and demographics, the AEQ and EDA yielded similar results in predicting drinking. In addition, expectancies explained more variance than attitudes in predicting behavior, if the behavioral measure was quantified. There have been no other studies noted in the literature, in which comparisons have been made between the instruments.

Vik, Carrello, and Nathan (1999) compared the AEQ and the DEQ in a study evaluating the AEQ through confirmatory factor analysis. They found that when comparing Social Enhancement, Social Coping, Personal Enhancement, and Personal Coping scales on the AEQ, with scales on the DEQ, the correlations indicated congruent and divergent validity.

Although the AEQ and EDA are very similar, the NAEQ differs from the other instruments. This instrument focuses on the negative expectancies of consequences, as they impact on the decision to stop or restrain drinking, rather than focusing on motivation, as positive expectancies might measure (McMahon & Jones, 1993, 1993a, 1993b).

CHAPTER III

Current Research of Alcohol Expectancies

Alcohol Expectancies as a Predictor of Future Alcohol Use

This chapter describes current literature related to the role of alcohol expectancies as a predictor of future alcohol use. The research can most easily be divided into two areas: children and adolescent studies, and adult studies.

Children and Adolescent Studies

Recent studies have focused on the development of alcohol expectancies in children. The following is representative of current research related to alcohol expectancies in children and adolescents.

Query, Rosenberg, and Tisak (1998) sought to evaluate whether young children endorse alcohol-specific expectancies. A sample of 124 second and third grade children were interviewed based on the Children's Alcohol-Related Expectancy Questionnaire. They assessed each child's beliefs about the desirable and undesirable consequences that adult women and men may experience after consuming alcohol (beer), and a control beverage (iced tea). They found that children endorsed significantly more undesirable expectancies for beer compared to iced tea. The children anticipated more undesirable outcomes for women than for men. The second-graders expected fewer desirable outcomes for women than for men, regardless of the beverage consumed. These findings suggest that children have developed expectancies regarding alcohol well before substantial experience with consuming alcohol occurs.

Rather and Goldman (1994, p. 168) theorize that the development of alcohol expectancies as a "parallel processing memory network". This involves processing

samples of information from a larger quantity of information storage points, and formulating the information which is pertinent to the specific stimulus in a stepped process. The organization of the information affects the development of expectancies.

Dunn and Goldman (1998) sought to advance this theory, and to obtain data that demonstrates the transition between acquisition of expectancies and the onset of drinking in adolescence. They studied 2,324 children in grades three, six, nine, and twelve. Individual-differences scaling (INDSCAL), which is a variant of multidimensional scaling, mapped expectancies into a hypothetical memory network, and preference mapping (PREFMAP) modeled hypothetical paths of association within this network. They found that older, and higher drinking youth appeared to associate positive and arousing effects with alcohol cues, which were similar to the effects reported by adults who drank in higher quantities. This suggests that they were more likely to be evaluating the pharmacological effects (arousal vs. sedation), than reflecting value judgments (positive vs. negative). They also found that higher quantity drinkers were more likely to have activation of positive and arousing outcomes. This suggests that these outcomes may influence drinking onset and frequency. The lower quantity drinking children mainly associated undesirable effects with alcohol cues. They found that drinking-related differences in the organization of expectancy information are recognizable well before regular drinking habits begin (as early as 3rd grade), and may affect the development of drinking in adolescence.

Dunn and Yniquez (1999) sought to further evaluate the activation of alcohol expectancies in memory of children by studying the influence of alcohol advertising on the activation of expectancies. They studied 551 fourth and fifth grade children. The

children watched five beer commercials, and five soft drink commercials. After doing so, the children reported their first associate to an alcohol prompt, as well as completing a memory-based model of children's alcohol expectancies. The children who viewed beer commercials were more likely to activate positive and arousing alcohol expectancies. This suggests that antecedents to drinking, such as exposure to alcohol advertising, may promote increased drinking among children by influencing the activation of expectancies in memory.

Gaffney, Thorpe, Young, Collet, and Occhipinti (1998) studied the correlation of social skills and alcohol expectancies with drinking in adolescents. They found that among the 732 adolescent subjects, that alcohol usage was associated with social skills deficits, positive alcohol expectancies, and negative cognitive structures regarding their parents and teachers. The results indicated that the greater part of the variance in drinking behavior was explained by the independent effects of social skills and expectancies. The interaction of social skills and expectancies explained an additional and significant amount of the variance.

Wiers, Gunning, and Sargeant (1998) investigated whether children of alcohol dependent individuals have more positive or negative alcohol expectancies than a control group. They assessed the alcohol expectancies and alcohol use of 185 children of alcohol dependent individuals between the ages of 7 and18 years and compared these to a control group. They found that elementary school-aged children of alcohol dependent individuals had stronger negative expectances when compared to the control group children of the same age. They also found that there was an interaction between family history and the children's own experience with alcohol, which affected either a positive or negative

expectancy in the adolescent subject. Specifically, children of alcohol dependent individuals who had initiated use of alcohol had more positive expectancies.

Brown, Tate, Vik, Haas, and Aarons (1999) had similar findings when studying the impact of family history of alcohol dependence and exposure to abusive parental drinking on the alcohol expectancies of adolescent children. They found that exposure to familial models of alcohol abuse and biological family history of alcoholism were both predictive of positive alcohol expectancies of adolescent children. The degree of exposure to an alcohol abusing family member mediated the relationship between biological family history of alcoholism and adolescent alcohol expectancies. The findings suggest that an adolescent child who is exposed to an alcohol abusing family member will have stronger positive alcohol expectancies.

Ouellette, Gerrard, Gibbons, and Reis-Bergan (1999) studied the combined effect of parental, social, and cognitive factors, on alcohol expectancies, alcohol consumption, and alcohol-related life problems in a longitudinal study. Their findings suggest that social and parental factors are antecedents to alcohol expectancies. They also found that cognitive factors (e.g. risk images, which are cognitions regarding undesired outcomes) mediate the effect of parental influence on consumption. The adolescent subjects who reported risk images were less likely to consume alcohol, even if the parents reported positive alcohol expectancies. The adolescent subjects who did not endorse risk images were more likely to use alcohol, even if the parents reported negative alcohol expectancies.

Corvo and Persse (1998) studied the effect of a pre-school based prevention program on children's alcohol expectancies. When comparing the alcohol expectancies of 36

children who completed this prevention program to those of a control group of 36 children at a three year interval, there were no differences.

Adult Studies

Recent studies have continued to evaluate the role of alcohol expectancies in predicting future use of alcohol in adults. The following studies are representative of the research literature involving adults.

Sharkansky and Finn (1998) sought to show a causal relationship between alcohol expectancies and alcohol consumption by experimentally manipulating expectancies and measuring ad lib consumption of alcohol in a laboratory setting. They also sought to determine if manipulating expectancies of alcohol consumption would differ as a function of disinhibition. The sample included 120 male, nonproblem drinkers. The subjects were divided into three groups, and were told one of three statements about the effects that alcohol would have on their performance on a task. The statements included that alcohol would impair task performance have no effect, or the effects were unknown. The subjects who were told that alcohol would impair task performance expected greater impairments in performance and consumed less alcohol, when compared to the subjects who were told that alcohol had no effect on performance and the subjects who were told that effects of the alcohol were unknown. The differences in alcohol consumption across the groups were mediated by expected effects of alcohol on task performance. The subjects who scored higher in disinhibition expected more negative effects of alcohol in the impairment condition when compared to the other conditions. The subjects who scored lower in disinhibition did not expect differences in the effects of alcohol across all of the conditions. The results suggest that alcohol outcome expectancies can be

manipulated by priming the individual to influence beliefs about what impact alcohol usage will have on their performance. The causal effect of expectancy on alcohol consumption was

shown. This study was the first to demonstrate a causal effect of expectancy using a behavioral measure of alcohol consumption.

Leigh and Stacy (1998) studied whether previous alcohol usage predicted associative memory responses to negative and positive outcomes of drinking. They also studied whether the normative frequency of positive and negative outcomes affected responses. The subject group was comprised of 609 college students. They found that previous alcohol use, normative frequency of outcome, and the number of outcomes listed strongly predicted alcohol-related associative responses to positive outcomes, and to a lesser degree, negative outcomes. The results suggest that repetitive alcohol use strengthens the association in memory between alcohol concepts and both positive and negative outcomes. The results also suggest that cognitions about potential positive outcomes may be cued more readily by situational factors and events.

Lee, Greely, and Oei (1999) studied the relationship of positive and negative alcohol expectancies to patterns of consumption of alcohol in social drinkers. The subjects in this study included 193 men and women from the general population. Their findings showed that negative expectancies accounted for the greater amount of variance in frequency of consumption. Positive expectancies remained important as a predictor of consumption, which accounted for the greater amount of variance in quantity consumed per session.

O'Hare (1998) studied the relationship between positive alcohol expectancies and the context in which young adults drink. The subjects included 315 youthful drinkers. The

alcohol expectancies being measured included increased social assertiveness, tension reduction, and enhanced sexual pleasure, as measured using the AEQ. The three drinking contexts included convivial, personal-intimate, and negative coping, from the Drinking Context Scale. They found that the expectancies of social assertiveness and tension reduction varied directly with all three excessive drinking contexts. The expectancy of enhanced sexual pleasure varied significantly with personal-intimate drinking only.

Kidorf and Lang (1999) studied the effects of social anxiety and alcohol expectancies on stress-induced drinking. The subjects consisted of 42 male and 42 female college students, who participated in a two day study. In each session, the subjects consumed their preferred alcohol beverage during a 30-minute drinking period. The subjects served as their own controls. The first session established baseline consumption under nonstressful conditions. In the second session, participants drank while anticipating that they would be required to give a speech. The subjects completed measurements of social anxiety and alcohol expectancies. The results showed that the subjects consumed more high alcohol content drinks during the stressful situation. Those with high trait social anxiety, and men expecting the alcohol to increase assertiveness, were most likely to show this effect. The findings of this study suggest that there is a very specific association between individual characteristics and stress-induced drinking.

Kushner, et al. (2000) sought to further investigate whether alcohol expectancies affect tension and anxiety in a time-specific manner. The subjects rated their expectancies for a moderate amount of alcohol to increase, decrease, or not change their level of tension and anxiety. The ratings were repeated for when the intoxicating effects of the drinking would be in the following three Time Epochs respectively: 1. “at their

peak”, 2. “nearly worn off”, and 3. “completely worn off”. They found that 72% of the subjects expected alcohol to reduce tension and anxiety at the first epoch. Significantly fewer subjects expected this effect at the second and third time epochs (25% and 2%, respectively). Very few subjects (3.5%) expected alcohol to worsen tension and anxiety at the first time epoch, with significantly more subjects expecting this effect at the second and third time epochs (31% and 34% respectively). The expectancies for the first time epoch related most strongly to several measures of alcohol use, including drinking for the purpose of reducing tension (whole sample), and drinking frequency (men but not women). Their findings suggest that tension-reduction expectancies do not remain stable during a drinking episode

Kilbey, Downey, and Breslau (1998) sought to study the role of alcohol expectancies, and other risk factors, including demographics, personality, and affectivity, in predicting the emergence and persistence of alcohol dependency in young adults. The lifetime prevalence of alcohol dependence was 18.1% at baseline. They found that 66.9% of the subjects classified as current alcohol dependent at baseline were in remission at the 3.5 year follow-up. Within the subjects classified as alcohol dependent but in remission at baseline, 11.3% were currently alcohol dependent. They also found that at the 3.5 year follow-up, 5% of the subjects with no history of alcohol dependence at baseline met the criteria for current alcohol dependency. Higher extraversion, male gender, and lower positive affect scores were predictive of emerging current alcohol dependence at the follow-up. The expectation of improved social and sexual experiences following alcohol use predicted persistent current alcohol dependence.

Williams, Connor, and Ricciardelli (1998) studied the significance of alcohol outcome expectancies and self-efficacy in the prediction of alcohol dependence, and alcohol consumption. They used a sample of young adult drinkers, which had previously been identified as supportive of risky drinking behavior. Results indicated that alcohol outcome expectancies were found to mediate self-efficacy for both males and females. Women had a greater range of expectancies, and self-efficacy scales were found to predict heavy drinking as measured by frequency and quantity. Their findings suggest that female and male drinkers may become more similar as they progress along the continuum of drinking from risky drinking to dependent drinking.

Oei, Fergusson, and Lee (1998) studied the differential role of alcohol expectancies and drinking refusal self-efficacy in problem and nonproblem drinkers. The subjects included 276 drinkers, who were selected from general and clinical samples. They completed a questionnaire about alcohol expectancies, drinking refusal self-efficacy, consumption, degree of dependence, and demographics. They found that in social drinkers, the expectancy and self-efficacy constructs were able to differentiate between the types of drinker. Expectancy was related to alcohol consumption in social drinkers, but did not appear to account for a significant amount of the variance in problem drinkers.

Brown, Carrello, Vik, and Porter (1998) studied the change in alcohol expectancies and self-efficacy during addiction treatment. The subjects included 101 male and female participants in an abstinence focused inpatient alcohol and drug treatment program. The participants completed the AEQ and the Alcohol Situational Confidence Questionnaire during the first and fourth (final) week of treatment. The results indicated that alcohol expectancies and self-efficacy were inversely correlated at the beginning of treatment, and

both alcohol expectancies and self-efficacy changed significantly during the treatment program. They found that larger decreases in positive alcohol expectancies were evident for individual who entered treatment with less confidence in their ability to resist drinking, in comparison to those with more confidence in their ability to resist drinking.

Chapter IV

Implications and Recommendations

When analyzing the literature related to alcohol expectancies, it becomes evident that there are several implications and recommendations for addressing alcohol expectancies in the prevention, treatment, and research of alcohol dependence.

First, the literature indicates that there continues to be a need for preventative measures to avoid the onset of alcohol abuse and addiction. The research indicates that prevention can take form on an individual, familial, and/or societal level.

The most useful individual, preventative measures should be focused on children and adolescents, if the findings of the research hold true. By using instruments such as the AEQ-A, clinicians may be able to identify children who are at most risk to use alcohol. They can then use this information to address the specific alcohol expectancies of the child at risk. In particular, the aim would be to strengthen the negative expectancies while decreasing the positive expectancies. By decreasing the positive expectancies and increasing the negative expectancies, the child will be less likely to continue using alcohol, should they start. This may diminish the combined affect of usage and positive expectancies as well. However, this has not been shown to be effective with children of alcohol dependent individuals. Therefore, further focus on other areas, such as familial and community based interventions may be more effective. It is imperative that more research be conducted to find how alcohol expectancies can be better used to address prevention of onset of drinking, and prevention of ongoing alcohol abuse for this group of children.

In addition to addressing the specific alcohol expectancies, it is important to address other individual risk factors, such as social skills deficits and self-confidence. As mentioned earlier, this may not be effective in isolation, however targeting these specific deficits, along with specific alcohol expectancies may prove to be effective. For example, a child who maintains positive alcohol expectancies related to social pleasure, increased social assertiveness, and relaxation, may benefit from a specific plan to address assertiveness, general social skills, drink refusal skills, and relaxation techniques. It would also be important to increase the negative alcohol expectancies the child has related to assertiveness, social pleasure, and tension reduction. It may also be important to increase attention to the sedating affects of alcohol to undermine the positive anticipation of arousing affects.

The research also implies that prevention can occur at a familial level as well. This becomes evident when reviewing the literature related to the impact of the family on alcohol expectancies. The research shows that children are more likely to have positive alcohol expectancies if there is alcohol abuse or dependence in the family. The family can impede the development of positive alcohol expectancies to a degree by limiting the exposure the child has to alcohol abuse and dependence. Practically speaking, this would be difficult unless at least one parent is willing and able to limit the exposure to the drinking family member. This could include limited access to the child through visitation agreements if the parents are not living together, or removing the parent from the home when they are reinforcing positive alcohol expectancies, or in the midst of a relapse.

The family can also impact the development of positive alcohol expectancies by limiting the child's exposure to influences which may strengthen positive alcohol

expectancies. This can occur by the parents limiting portrayal of positive alcohol expectancies, either verbally, or nonverbally, in the child's presence. Parents can also limit their child's access to other

influences such as the media, and other children who may be portraying positive alcohol expectancies related to alcohol usage.

The role of society in the development of positive alcohol expectancies should also be examined further in order to reduce the likelihood that children will use alcohol. Public policy could demand that companies distributing alcoholic beverages not be allowed to advertise in the media typically accessed by children. This is particularly important in light of the research indicating the impact of such advertising on the development of alcohol expectancies in the memories of children. There has been some movement recently in Congress to force the movie industry to become more responsible in protecting children from harmful messages regarding alcohol usage. This may come in the form of not allowing movie makers to advertise movies containing the glorification of alcohol usage during movies which have been rated as acceptable for children.

The information related to alcohol expectancies can also be used in the treatment of alcohol abuse and dependence. When addressing alcohol expectancies in treatment of abuse and dependence, the research indicates that a very individualized approach is necessary. In order to individualize treatment, efforts should focus on using this research to improve and formalize assessment procedures. By using instruments such as the AEQ, and the NAEQ, a clinician can target the specific alcohol expectancies which require modification, along with other factors such as social skills deficits.

When considering which alcohol expectancies to target, the research supports strengthening negative alcohol expectancies to reduce the frequency of drinking. When addressing negative alcohol expectancies, the research demonstrates that subjects with negative alcohol expectancies of long-term effects were more likely to abstain. As with children, it may also be important to increase attention to the sedating affects of alcohol to undermine the anticipation of arousing affects. Research also supports modifying positive alcohol expectancies to reduce the persistence of alcohol dependence. Modifying alcohol expectancies should be an important component of a successful relapse prevention program.

Along with alcohol expectancies, self-efficacy should be considered when forming a comprehensive treatment plan. The research demonstrates that addressing alcohol expectancies and self-efficacy are important when considering relapse prevention. Along with targeting specific alcohol expectancies, it is important that the client gain a sense of self-confidence in their ability to successfully abstain from alcohol. This could occur through a cognitive behavioral approach that increases confidence in the use of drink refusal skills, while addressing deficits in assertiveness through assertiveness training.

Analysis of the research literature also indicates areas in which further research is warranted. There is insufficient material related to the interaction of the pharmacological effects of alcohol and alcohol expectancies. It seems important to examine the interactions between the pharmacological affects and alcohol expectancies which may be important in understanding continued substance abuse. It is also evident that further research is necessary in the area of negative alcohol expectancies, and the usefulness of the NAEQ in assessment and treatment of substance abuse. Research in this area could

lead to further understanding of specific expectancies which may lead to avoidance of drinking. This would be very useful in prevention of the onset of drinking, the maintenance of drinking, and in relapse prevention. Further research using the NAEQ as a tool to assess progress during, and after treatment is warranted. This may be a reliable method of measuring changes in expectancies as a result of treatment. There is also a lack of research which focuses specifically on the effectiveness of addressing alcohol expectancies to prevent and treat alcohol abuse and dependence, as well as the specific interventions necessary to influence alcohol expectancies. This may be the most logical new frontier in alcohol expectancy research.

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